

**WHAT IS CLAIMED IS:**

1. A method of establishing a virtual intranet over the Internet based on a digital closed network constructed from at least one network private branch exchange (PBX) having an identification method and storing at least one published IP address, extension numbers and virtual IP addresses corresponding to the extension numbers; and a key telephone system that is composed of a plurality of extensions (20), the method comprising the steps of:

registering each extension to the telephone exchange whereby each extension has an own extension number and the published IP address;

linking at least one registered extension to the Internet;

using the published IP address as a destination IP address; and

linking at least one registered extension back to the network PBX;

whereby the at least one registered extension and the network PBX connected to multiple other extensions are constructed to the virtual intranet over the Internet.

2. The method as claimed in claim 1, in the linking at least one registered extension to the Internet step the at least one registered extension links to the Internet through a network device

3. The method as claimed in claim 2, wherein the network device is a modem.

4. The method as claimed in claim 2, wherein the network device is an XDSL.

5. The method as claimed in claim 1, wherein in the linking at least one registered extension to the Internet step the at least registered extension links to

1 Internet through a wireless network device linked to the Internet.

2 6. The method as claimed in claim 1, the network PBX further having a  
3 function of two-way converting, wherein the telephone exchange converts  
4 external voices signals from the network PXB connected to PSTN to a form of  
5 voice packets or to restore the voice packets to the voice signals.

6 7. A virtual intranet comprising:  
7 one network private branch exchange (PBX) having a voice packet  
8 converting and restoring function, wherein the network PBX stores extension  
9 numbers, virtual IP addresses respectively corresponding to each extension  
10 number and at least one published IP address and is set up as an identification  
11 method; and

12 multiple extensions connected to the network PBX to form the closed  
13 network, whereby voice, data and video are able to be transmitted over the  
14 closed network, wherein each extension obtains an own extension number, the  
15 virtual IP address and the published IP address from the identification method  
16 when the extension is connected to the network PBX;

17 whereby each extension is able to link to the network PBX over the  
18 Internet when the extension links to Internet by using the published IP address as  
19 a destination IP address.

20 8. The virtual intranet as claimed in claim 7, wherein the network PBX  
21 comprises:

22 a main controller stored with multiple extension numbers, the virtual IP  
23 address and set up with the identification method; and

24 a packet switch having at least two network ports for IEEE 802.3

1 protocol to connect the extensions, wherein the packet switch is set up with the  
2 published IP address.

3 9. The virtual intranet as claimed in claim 8, wherein the network PBX  
4 further comprises a packet processing unit for two-way converting connected  
5 between the main controller and an extra PBX for PSTN.

6 10. The virtual intranet as claimed in claim 8, wherein each extension  
7 comprises:

8 a controller with the two-way converting function, wherein the  
9 controller is able to convert voice signals to the form of voice packets, and is able  
10 to restore the voice packets to the voice signals; wherein the controller stores an  
11 own extension number and the own virtual IP address from the main controller  
12 and the published IP address;

13 a handset transmitting received voice signals to the controller, wherein  
14 the handset is able to broadcast voice signals output from the controller;

15 a first network connecting interface connecting between the controller  
16 and one of the network device; and

17 a second network connecting interface connecting between the  
18 controller and the network PBX.

19 11. The virtual intranet as claimed in claim 10, wherein the first network  
20 connecting interface is connected to the network device through a network  
21 interface card installed in a network device.

22 12. The virtual intranet as claimed in claim 11, wherein each extension  
23 further comprises a bridge connected between a first network connecting  
24 interface and the second network connecting interface to control transmission

1 flow.

2 13. The virtual intranet as claimed in claim 10, wherein the controller  
3 further connects to a display, a key set and an image capturing device.

4 14. The virtual intranet as claimed in claim 9, wherein the network PBX  
5 further comprises at least one wireless network port for connecting to at least one  
6 wireless access point.

7 15. The virtual intranet as claimed in claim 14, wherein each extension  
8 comprises:

9 a controller with the two-way converting function, wherein the  
10 controller is able to convert voice signals to the form of voice packets, and is able  
11 to restore the voice packets to the voice signals; wherein the controller stores an  
12 own extension number and the own virtual IP address from the main controller  
13 and the published IP address;

14 a handset transmitting received voice signals to the controller, wherein  
15 the handset is able to broadcast voice signals output from the controller;

16 a first network connecting interface connecting between the controller  
17 and one of the network devices; and

18 a wireless network port for a wireless card connected between the  
19 controller and the wireless access point.

20 16. The virtual intranet as claimed in claim 15, wherein each extension  
21 comprises a second network connecting interface connecting between the  
22 controller and the network PBX.

23 17. The virtual intranet as claimed in claim 15, wherein the first network  
24 connecting interface is connected to the network device through a network

1 interface card installed in a network device.

2 18. The virtual intranet as claimed in claim 15, wherein each extension  
3 further comprises a bridge connected between a first network connecting  
4 interface and the second network connecting interface to control transmission  
5 flow.

6 19. The virtual intranet as claimed in claim 15, wherein the controller  
7 further connects to a display, a key set and an image capturing device.

8 20. The virtual intranet as claimed in claim 8, wherein the main  
9 controller further comprises a network backbone port for connecting a bridge  
10 through an Ethernet backbone.